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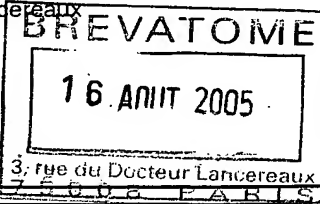
**PCT**

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(règle 72.2 du PCT)

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Déposant COMMISSARIAT A L'ENERGIE ATOMIQUE etc	

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Translation

PATENT COOPERATION TREATY

PCT/FR2003/050152



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference B 14167.3 GB	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/FR2003/050152	International filing date (day/month/year) 04 décembre 2003 (04.12.2003)	Priority date (day/month/year) 09 décembre 2002 (09.12.2002)
International Patent Classification (IPC) or national classification and IPC G09B 21/00		
Applicant COMMISSARIAT A L'ENERGIE ATOMIQUE		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 7 sheets, including this cover sheet.
- ☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 5 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 01 juin 2004 (01.06.2004)	Date of completion of this report 21 March 2005 (21.03.2005)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/FR2003/050152

## I. Basis of the report

## 1. With regard to the elements of the international application:\*

- ☒ the international application as originally filed
- ☒ the description:  
pages 1-21, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☒ the claims:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, as amended (together with any statement under Article 19  
pages \_\_\_\_\_, filed with the demand  
pages 1-13, filed with the letter of 30 September 2004 (30.09.2004)
- ☒ the drawings:  
pages 1/7-7/7, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

## 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
PCT/FR 03/50152

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Claims	1-13	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-13	NO
Industrial applicability (IA)	Claims	1-13	YES
	Claims		NO

### 2. Citations and explanations

#### 1. Reference is made to the following documents:

D1: PATENT ABSTRACTS OF JAPAN, vol. 015, no. 344  
(P-1245), 30 August 1991 (1991-08-30) & JP 03  
129386 A (CANON INC) 3 June 1991 (1991-06-03);

D2: "THIN FILM PIEZOELECTRIC VIBRATOR PANEL" IBM  
TECHNICAL DISCLOSURE BULLETIN, IBM CORP, NEW  
YORK, US, vol. 34, no. 3, 1 August 1991  
(1991-08-01), pages 132-134, XP000210473 ISSN:  
0018-8689;

D3: "MICROMOTORS" Microelectronics and VLSI, 1995.  
TENCON '95, IEEE Region 10 International  
Conference in Hong Kong 6-10 November 1995  
(1995-11-06) New York, NY, USA, IEEE, US, pages  
8-11, XP10160106A, ISBN: 0-7803-2624-5.

#### 2. Independent claim 1

Document D1, which is considered to be the prior art  
closest to the subject matter of claim 1, describes  
a touch-sensitive display device (the abstract)  
comprising:

- a touch plate 21 (figure a) having a touch surface 20;
- an array of magnetic coils in the form of a unitary layer (sheet coil layer 23, the abstract and figures 3 and 7: the coils illustrated in figures 3 and 7 are planar coils) for activating tactile sensation-modifying portions (figure 8);
- an intermediate layer 22 positioned between the coil array layer 23 and the touch plate 21;
- an addressing circuit for selectively addressing currents in the various coils ("in some position of a coil sheet layer 23", see the abstract), wherein
- the touch plate 21 comprises a unitary array of tactile sensation-modifying elements 25 including mobile portions (see the abstract), with each of said mobile portions being movable by a magnetic field generated by the array coils; and
- said intermediate layer 22 is an insulating layer (because, if this were not the case, there would be short circuits between coils 32 and wires 31, 32).

It follows that the subject matter of claim 1 of the present application differs from the device disclosed in D1 by virtue of the following features:

- (a) the tactile sensation-modifying elements consist of an assembly of one or more mobile blades secured to the touch plate via one or more arms, and one or more blade-releasing recesses are provided on a portion of the blade perimeter; and

(b) the intermediate layer comprises a recess positioned opposite each of the tactile sensation-modifying elements and providing a deformation space for the mobile-blade assembly of said element.

The problem that the present invention intends to solve by means of both of features (a) and (b) can therefore be considered to be that of increasing the displacement amplitude of the mobile portions.

D3 relates, in general, to the improvement of micromotors and addresses, in particular, the problem of increasing displacement in comparison with electrostatic motors (page 8, left-hand column, last paragraph: "... electrostatic actuation usually produces only small displacement ..."). The use of magnetic motors is proposed in order to achieve this.

Said document proposes assemblies of mobile blades (flaps) (figures 4 and 5). Opposite each mobile blade, there is a recess providing a deformation space (page 10, first paragraph in section V.1: "Each flap is suspended over a cavity"). This corresponds to feature (b) in claim 1 of the present application.

Moreover, in the embodiment described in section V.2, the mobile blades are not provided with coils per se but are covered with a magnetic film (5 micrometres of Permalloy). These blades are controlled by an external magnetic field and, in terms of shape, correspond to feature (a) in claim 1 of the present application.

In the embodiments described in sections V.1 and V.2 in D3, the main use of the mobile blades is to modify wing

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drag in an aircraft. However, D3 also mentions the possibility of using these micromotors to build display devices (sections I. and II. in D3).

Furthermore, the size of said mobile blades (a length of 0.5 to 4 millimetres for the blades disclosed in sections V.1, V.2 and V.3 in D3) means that said blades are entirely suitable for being integrated into a touch-sensitive display device as disclosed in D1. In the event of such integration, it would be obvious for a person skilled in the art to generate the external magnetic field necessary for activating the mobile blades of D3 by using planar coils integrated into layer 23 of D1.

As a result, it would be obvious for a person skilled in the art to use the features disclosed in D3 that correspond to features (a) and (b), with a corresponding effect, in a touch-sensitive display device as per document D1 and thereby arrive at a device as per claim 1 of the present application.

It follows that the present application does not fulfil the requirements set forth in PCT Article 33(1) because the subject matter of claim 1 does not involve an inventive step as defined in PCT Article 33(3).

### 3. Dependent claims

The additional features in claims 7, 10 and 11 are also disclosed in D1. As a result, the subject matter of said claims does not involve an inventive step. The features in the other dependent claims are either disclosed, for the same purpose as in the present application, in the documents cited in the search report or are generally known to a person

skilled in the art and do not, therefore, involve an inventive step (as far as the various arrangements for the blades are concerned, see D3).

**4. Additional observations**

- 4.1 In claim 1, line 23, the term "blades" is used instead of the expression "mobile blade", which is used throughout the rest of claim 1.
- 4.2 It appears that line 22 in claim 1 should read "tactile sensation-modifying elements, with each of said modifying elements consisting of an assembly of one or more". In the present version, the expression "consisting of" refers to the term "array" rather than to the term "element" and, as a result, claim 1 includes a device with only one mobile blade.
- 4.3 Contrary to the requirements of PCT Rule 5.1(a)(ii), the description does not indicate the relevant prior art disclosed in documents D1, D2 and D3, nor does it cite said documents.
- 4.4 The description is not consistent with the independent claim.